

## ASTROPHYSICS AND GEOPHYSICS

### LONG TERM MONITORING OF ACTIVE GALACTIC NUCLEI WITH BELL OBSERVATORY 0.6m TELESCOPE

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Active galactic nuclei (AGN) are some of the most energetic objects in the Universe. They are composed of an ordinary elliptical galaxy with a super massive black hole at the center. A disk of material, called an accretion disk, surrounds the super massive black hole, and jets of material moving at nearly relativistic speeds are emitted perpendicular to the disk. In the BL Lacertae class of AGN jets are pointed almost directly along the line of sight, resulting in large amplitude, erratic brightness variations. Our primary goal is the monitoring of the brightness variations of BL Lac objects and using these variations to investigate the physics at work in these objects. BL Lacs are the most extreme example of an AGN with highly variable continuum emission as one of their defining characteristics. We have undertaken a program to monitor these continuum variations by using the Bell Observatory 0.6m telescope. Undergraduate students run the sessions from WKU's campus via the Internet or on-site. The telescope is equipped with CCD camera, which is used to obtain data that is then transferred to WKU's campus where it is archived and analyzed by undergraduate students. The results of the first year of monitoring BL Lacertae objects, specifically BL Lac, A0235+164, 3C 66A, and MRK 501 are seen on the following light curves.

